TOBACCO INDUSTRY RESEARCH COMMITTEE

150 East Forty Second Street

New York 17, N.Y. #231

Application for Research Grant

Date: February 28, 1959

1. Name of Investigator: Leslie Michael Rosa, M.D.[1] and Aldo A. Luisada, M.D.[2]

2. Title: (1) Assistant Professor of Medicine - (2) Assoc. Prof. of Medicine; Dir., Division of Cardiology

3. Institution & Address: The Chicago Medical School, Division of Cardiology, 2755 W. 15th St., Chicago 8, Illinois

4. Project or Subject: Investigation on the effect of cigarette smoking in 50 normal subjects and 50 patients with coronary heart disease with special emphasis on records of precordial displacement and acceleration (a 2 year study).

1003470

5. Detailed Plan of Procedure (Use reverse side if additional space is needed):

Has cigarette smoking any effect on the cardiovascular system?

The significance of objective methods in the verification of similar findings is unquestionable. Records of precordial displacement and acceleration in the filtered ballistic frequency range represent objective criteria for changes in circulatory dynamics (L. M. Rosa: Einfuehrung in die ballistische Kardiographie, Edition Regensberg, Muenster, 1958; in press: Amer. J. of Cardiology).

Precordial displacement corresponds to the lowest frequency range of vibrations caused by the heart beat (0-5 cycles per second). Precordial acceleration is the second mathematic derivative of displacement. It may be registered by the use of accelerometers, mathematic or graphic differentiation of the displacement tracing, or the application of band pass filters in the range 5-25 c.p.s. Both precordial displacement and acceleration tracings have been studied in basic experiments by the investigators. These tracings have been found closely related to total body ballistocardiograms; however, pattern and time relationship to circulatory events seem to be more constant and reproducible in precordial derivation. Standard patterns have been used as the basis of comparison with conditions of changed cardiovascular dynamics, and significant alterations have been found.

Preliminary tests carried out by Dr. Rosa, by using this method, failed to disclose significant effects produced by smoking within 15 minutes. This observation requires a much more extensive study for evaluation, but is sufficient to awaken new interest in the problem.

Source: https://www.industrydocuments.ucsf.edu/docs/xqpl0000

The investigators are going to conduct a two-year research program in coronary heart disease under the sponsorship of the American Heart Association. This study will include the workup of 50 normal subjects and 50 patients suffering from coronary heart disease.

Apart from precordial methods, routine electrocardiography, phonocardiography, chest x-ray, ballistocardiography, and usual clinical tests will be made for 2 subsequent years. It is suggested that, under the sponsorship of the Tobacco Industry Research Committee, a parallel study be made. The effect of cigarette smoking would be studied on the same clinical material, including both normal subjects and coronary patients.

Buechley and coworkers (Circulation, 18: 1085, 1958) from the California State Department of Public Health, found a significant difference in death rate from coronary heart disease between non smokers and heavy smokers. The study has been based on 19 similar previous publications.

A research group at Johns Hopkins University published five experimental reports on this problem and stated (F. M. Davis: The Am. J. of Cardiology, 3:103, 1959) that changes in cardiovascular dynamics in patients with coronary heart disease are dramatically reflected in the ballistocardiogram after the routine smoking of a cigarette.

The present study, as stated above, will compare, among other data, the low frequency tracing of the chest wall with the ballistocardiogram of the body. If any change in tonus of the skeletal muscle is responsible for BCG changes, the low frequency tracing of the chest, which is not influenced by muscular tonus, will provide an objective basis for the explanation of the previous findings.

Budget

1/3 salary of a full time Assistant	$2,000
1/2 salary of a full time technician	2,500
1/4 salary of a full time secretary (reports and filing)	1,750
photographic supplies	300
travel, meetings, books	300
8% overhead	548
	$ 7,398 per year

A Progress Report of the work accomplished will be sent to The Tobacco Industry Research Committee on July 1 of each year.

1003541011

Source: https://www.industrydocuments.ucsf.edu/docs/xqpl0000